

A NEW SUBSPECIES OF FUNNEL-EARED BAT (*NATALUS STRAMINEUS*)
FROM WESTERN VENEZUELA

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ABSTRACT: A new subspecies of the funnel-eared bat *Natalus stramineus* is described from a cave in the Guasare river, Zulia, Venezuela. On the basis of palatal structure, the 3 recognized subspecies of *N. major* are assigned to *N. stramineus*. The species status of *N. tumidirostris* and its possible synonymy with *N. stramineus* are also discussed. Additional records of *N. t. continentis* from northern Venezuela are included.

In October 1967, an expedition of the Venezuelan Society of Speleology collected four specimens of a unique funnel-eared bat in a cave in the state of Zulia, Venezuela. These proved to be the first specimens of *Natalus stramineus* taken in Venezuela and northern South America. Comparison with material from Central America indicates that the Venezuelan bats represent a distinct subspecies, which is named and described below.

Natalus stramineus tronchonii, new subspecies

Holotype: An adult male, alc. with skull, Biology Museum, Central University of Venezuela, MBUCV 1-1578, collected by J. A. Tronchoni (original number L-281) from Gavilanes cave (Zu-1, Soc. Venezolana Espel., 1968: 113-118), Guasare river, Zulia, Venezuela, 183 m, 20 October 1967.

Paratypes: Three adult females, alc. with skulls, MBUCV 1-1577, 1-1579 and 1-1580 of the same locality, date and collector.

Distribution: Known only from the type locality.

Diagnosis: A small subspecies with the posterior border of the bony palate deeply emarginate to the level of the last molar. Very similar to *N. s. mexicanus* Miller [= *N. s. saturatus* Dalquest and Hall, 1949], but smaller, and morphological characters intermediate between *tumidirostris* and *stramineus*.

Description: Body size small (forearm 39.7 mm; greatest length of skull 16.1 mm). Dorsal coloration after one year in alcohol (capitalized color terms after Ridgway, 1912) Cream Buff, tips of hairs gradually darkened to a Pale Drab, underparts more yellowish than back. Vibrissae abundant and conspicuous on snout. Ears and lips grayish. Membranes, feet and legs, dark brown. Other somatic characters as in *N. stramineus*. Skull strictly similar to that of *stramineus* type, but with a palate intermediate in size between *stramineus* and *tumidi-*

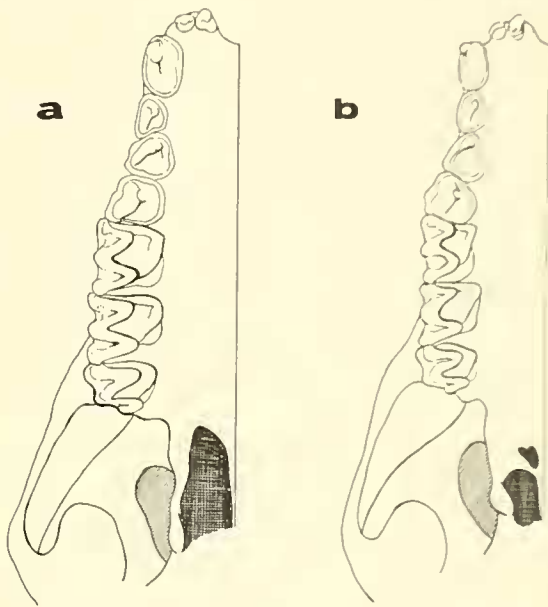


Figure 1. Palatal emargination and dentition of upper right jaw of: a, *Natalus stramineus tronchonii* (MBUCV 1-1578, ♂ — holotype), and b, *Natalus stramineus mexicanus* (TCWC 8507, ♀).

rostris. Upper molar with the hypocone widest lingually. The differences in the palate and dental characters between *N. s. tronchonii* and *N. s. mexicanus* are shown in Figure 1.

Measurement: The holotype and the paratypes are similar (Fig. 2; Table 1).

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TABLE 1. Measurements (mm) of *Natalus stramineus tronchonii* from Venezuela compared with selected measurements of *Natalus stramineus mexicanus* from Mexico, Nicaragua and Guatemala.

	<i>N. s. tronchonii</i>				<i>N. s. mexicanus</i>		$\bar{X} \pm 1SD$
	1577 ♀	1578 ¹ ♂	1579 ♀	1580 ♀	n	Range	
Total length (body + tail)	97.0	97.0	92.0	100.0	—	—	—
Length of tail	52.0	51.0	46.0	53.0	—	—	—
Hind foot	8.0	8.5	8.0	8.5	—	—	—
Ear from meatus	14.0	14.5	13.0	14.0	—	—	—
Forearm	38.3	39.7	37.1	38.3	10	(36.9-39.8)	38.25 ± 0.85
Third finger, metacarpal	35.0	36.6	34.8	36.1	10	(34.4-37.5)	35.75 ± 1.00
first phalanx	16.4	15.9	15.3	15.7	10	(14.0-17.0)	15.35 ± 0.70
second phalanx	21.8	21.6	20.7	21.7	10	(19.3-22.3)	21.14 ± 1.04
Fourth finger, metacarpal	35.2	35.2	33.8	35.2	10	(33.3-37.3)	35.20 ± 1.12
first phalanx	10.0	9.0	9.6	9.4	10	(8.4-10.4)	9.16 ± 0.61
second phalanx	9.9	10.6	9.7	10.3	10	(9.5-10.6)	9.90 ± 0.34
Fifth finger, metacarpal	35.3	34.9	34.2	34.6	10	(33.4-37.3)	34.93 ± 1.33
first phalanx	9.6	8.9	9.1	8.9	10	(8.3-10.1)	9.06 ± 0.55
second phalanx	10.4	10.5	10.5	10.4	10	(9.5-11.4)	10.26 ± 0.67
Skull,							
greatest length	15.5	16.1	—	15.9	10	(15.4-16.4)	16.02 ± 0.39
condylo-basal length	14.4	14.9	—	14.8	10	(14.2-15.2)	14.73 ± 0.32
condylo-canine length	14.0	14.3	—	14.3	9	(14.2-14.9)	14.48 ± 0.24
basal length	13.1	13.5	13.1	13.4	10	(13.3-13.9)	13.54 ± 0.20
palatal length	7.7	7.0	7.8	7.7	10	(8.7-9.6)	9.02 ± 0.29
zygomatic width	7.7	8.1	7.7	—	10	(7.9-8.3)	8.11 ± 0.19
width of braincase	7.4	7.7	7.7	7.4	10	(7.5-8.0)	7.73 ± 0.14
height of braincase	6.1	6.1	—	5.9	10	(6.1-6.5)	6.22 ± 0.12
length of foramen magnum	3.0	3.4	—	2.9	10	(2.5-3.2)	2.67 ± 0.20
width of foramen magnum	3.3	3.6	—	3.6	9	(3.2-3.9)	3.43 ± 0.20
mastoidal width	7.0	7.3	—	7.1	9	(7.3-7.5)	7.41 ± 0.09
interorbital width	3.3	3.2	3.2	3.2	10	(2.8-3.1)	3.00 ± 0.10
width across molars	5.0	5.2	5.1	5.2	9	(5.1-5.3)	5.26 ± 0.06
width across canine	—	3.5	3.4	3.5	9	(3.5-3.8)	3.61 ± 0.10
upper toothrow, c-m ³	6.5	6.8	6.5	6.7	9	(6.8-7.0)	6.86 ± 0.08
lower toothrow, c-m ₃	7.0	7.1	6.8	7.1	9	(7.2-7.5)	7.33 ± 0.08
length of mandible	11.7	12.0	11.8	11.9	8	(11.4-12.5)	11.79 ± 0.32

¹holotype

Comparison and discussion: There are no external characters by which *N. stramineus* can be distinguished from *N. tumidirostris*. In cranial characters *N. s. tronchonii* can always be recognized by the small, swollen maxillary bones and semi-emarginated palate.

The characters of this population give rise to new doubts about the 3 recognized species of the subgenus *Natalus* (Dalquest, 1950). These 3 species are very similar (Goodwin, 1959); *major* is the largest (Jamaica, Cuba, Dominican Republic and Haiti), *tumidirostris* is intermediate in size (northern Venezuela, Curacao, Trinidad and Colombia) and *stramineus* is the smallest (Mexico, Central

America, western Venezuela and northeast Brazil). The size differences in some cases are not significant and, in general, are no greater than 2 to 3 mm in all known forms. Recent comparisons of more than 40 specimens from Venezuela and the 18 from Trinidad (some of which were reported by Goodwin, 1959) have led me to concur with Goodwin (1959) and Handley (1966) in considering *N. stramineus saturatus* Dalquest and Hall a synonym of *N. s. mexicanus* Miller, and to place *N. tumidirostris haymani* Goodwin in synonymy with *N. t. continentis* Thomas.

On the basis of an analysis of the form of the palate, only 2 groups can be admitted: *stramineus-*

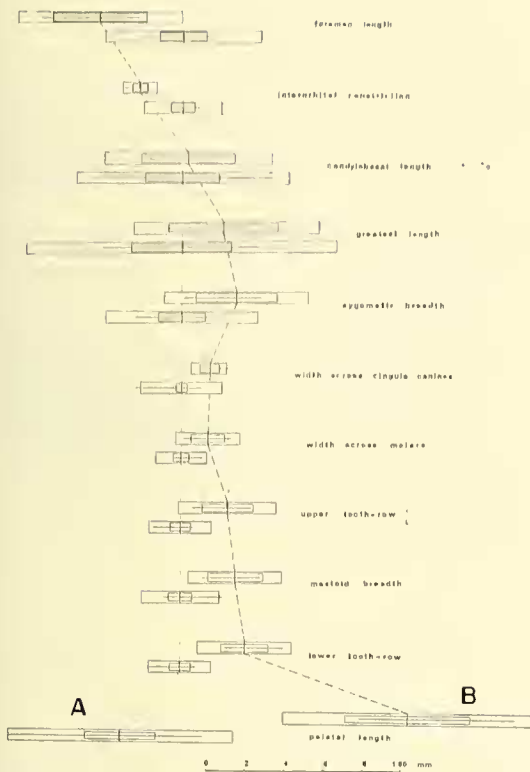


Figure 2. Comparisons of selected measurements of *Natalus stramineus mexicanus*, A (means connected by dotted line), and *N. s. tronchonii*, B (means connected by a dashed line). The means of measurements of the former have been arranged to form a base line for comparison with those of *N. s. tronchonii*. Horizontal lines indicate range, small boxes ± 1 standard error and large boxes ± 1 standard deviation.

major with a very short palate, and *tumidirostris* with a very long palate. The intermediate palate of the Venezuelan population poses the interesting question of a possible cline, and makes a careful revision of the subgenus necessary. Tentatively, I suggest that the 3 subspecies of *major* (Goodwin, 1959) be assigned to *stramineus*, thus bringing to 6 the known forms of this latter species.

Koopman (1968) assumes the presence of *N. stramineus* in the Lesser Antilles by way of South America. However, on the basis of this new criterion, it would be wiser to think of a mainland Neotropical center of origin, following a route from Yucatán (Mexico), Cuba, Jamaica, Hispaniola, to the Lesser Antilles; as the forms of *stramineus* have not been localized in northern South America. Goodwin (1959:4) mentions specimens from Brazil, Venezuela, and Trinidad, but he does not note any specific locality in either Venezuela or Trinidad.

Based on the criterion of palatal structure, it is more likely that *tumidirostris* is also a member of *stramineus*, thus reducing the subgenus *Natalus* to only one species. In this paper, I will retain *tumidirostris* as a full species which represents the maximum in the differentiation within the *stramineus-major* groups; more examples from South America should confirm or negate this thesis. A revision of the other species grouped in the various subgenera, and field investigations in the Greater Antilles, particularly Puerto Rico, would also provide new information concerning these delicate bats.

Additional specimens examined: Comparative material was kindly made available by the Texas Co-operative Wildlife Collection (TCWC), the American Museum of Natural History (AMNH), the United States National Museum (USNM), the La Salle Museum of Natural History (MHNLS), and the Museum of Natural Sciences, Caracas (MCNC). Specimens in the mammal collection, Biology Museum of the Tropical Zoological Institute (Central University of Venezuela), are designated by the abbreviation (MBUCV).

Natalus stramineus stramineus: ANGUILLA. Northside Estate (AMNH, 2).

Natalus stramineus major: DOMINICAN REPUBLIC. Barahona (AMNH, 2), Maniel Viejo (AMNH, 1).

Natalus stramineus jamaicensis: JAMAICA. St. Clair (AMNH, 3).

Natalus stramineus mexicanus: MEXICO. *Chiapas:* Cintalapa (TCWC, 2). *Nayarit:* Amatlán (AMNH, 8). *Tamaulipas:* El Pachon (AMNH, 5). GUATEMALA. Puerto Barrios (TCWC, 7); El Progreso (AMNH, 6). NICARAGUA. Rama (TCWC, 1).

Natalus stramineus tronchonii: VENEZUELA. *Zulia:* Guasare river, (MBUCV, 4).

Natalus tumidirostris continentis: TRINIDAD. Oropuche caves (MCNC, 1); Mt. Tamana (AMNH, 10). VENEZUELA. *Carabobo:* San Esteban (AMNH, 10). *Arauca:* Rancho Grande (MBUCV, 1); El Limón (MHNLS, 1). *Miranda:* Baruta (MHNLS, 1); El Hatillo (MBUCV, 3); Petare (MHNLS, 1); El Encantado (MBUCV, 44). MHNLS, 24. USNM, 7); Araira (MHNLS, 3); Virongo (MBUCV, 2); Capaya (MHNLS, 2). *Falcon:* Peninsula de Paraguaná (USNM, 20). *Bolívar:* Caicara (USNM, 15). COLOMBIA. San Gil, Cueva del Nitro (AMNH, 2).

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A NEW SPECIES OF *IPHITIME* (POLYCHAETA) FROM *CANCER ANTENNARIUS* (CRUSTACEA: DECAPODA)

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ABSTRACT: A new species of *Iphitime* is described from *Cancer antennarius*. Notes are given on the morphological criteria used in separation of the five species of the genus.

During fixation of a specimen of *Cancer antennarius* (Stimpson, 1856) at the Santa Catalina Marine Biological Laboratory, 2 specimens of a new species of *Iphitime* crawled out between the third maxillipeds of the host. These 2 specimens belong to a new species which is described below with notes on frequency of infection and some morphological features of the family.

Iphitimidae Fauchald, 1970

The genus *Iphitime* was originally referred to the family Lysaretidae (Marenzeller, 1902) but was recently raised to familial status by Fauchald (1970). This separation was made because members of this genus possess branchiae, composite setae, two antennae, three paired maxillae, maximally, and they lack an unpaired maxillary carrier. The

lysaretids, on the other hand, lack branchiae, have simple setae, three antennae, five maxillae, and three maxillary carriers.

Fauchald (1970:118) states that iphitimids have only simple falcate unhooded setae. However, this should be expanded to simple and composite unhooded setae. In addition, the two peristomial segments noted by Fauchald (1970:118) as diagnostic of the family *Iphitimidae* should be broadened to one or two peristomial segments. This change in the familial definition is made to encompass the new species, which has only one peristomial segment. All species of *Iphitime* are found in the branchial cavities of decapod crustaceans (Fauchald, 1970). Hartman (1952) suggested that

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